

REMARKS

Claims 1 and 10 have been amended and new claim 16 has been added to further define the invention, and claims 3, 6-9, and 11-15 have been canceled without prejudice or disclaimer. Accordingly, claims 1, 2, 10, and 16 are pending.

Applicants respectfully assert that support for amended independent claim 1, as well as new independent claim 16, may be found, for example, in FIG. 3, as well as beginning at page 6, line 20, of the Specification. Specifically, as shown in FIG. 3, a pump tank 28 is provided at each scrubber stage above the lowest one of the scrubber stages and has a corresponding pump 27 and feed pipe 29 to feed fluid from the corresponding ring-shaped fluid storage tank 10 at the bottom of the scrubber stage to the spray beams, wherein a length of the feed pipe is limited to a height of the scrubber stage. Accordingly, Applicants respectfully assert that amended independent claim 1 and new independent claim 16 do not introduce new matter.

Claim Rejections Under 35 U.S.C. §103(a)

On pages 2 to 6 of the Office Action, claims 1-3 and 6-15 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Warner et al. both singularly and in view of Nolan (US 6,399,030). Applicants respectfully traverse these rejections for at least the following reasons.

Independent claim 1, as amended, recites a scrubber for the cleaning of gases including, in part, a scrubber tower, a

plurality of scrubber stages, a separation trough at the bottom of each of the plurality of stages of the scrubber, a pump tank at each of the plurality of scrubber stages above the lowest one of the plurality of scrubber stages "arranged at an outer surface of the scrubber tower and connected directly to the corresponding ring-shaped fluid storage tank through a connection in the outer surface of the scrubber tower," and a circulation pump connected to the corresponding pump tank "at a level of each of the plurality of scrubber stages and arranged to feed, through a feed pipe present in the corresponding pump tank, fluid from the corresponding ring-shaped fluid storage tank at the bottom of the scrubber stage to spray beams arranged at the upper part of the scrubber stage for distribution over the cross-section of the scrubber in a direction against the up-wards gas flow," wherein "a length of the feed pipe is limited to a height of the scrubber stage," (emphasis added).

In direct contrast to Applicants' claimed invention, Warner et al. explicitly discloses, in FIG. 1A, tanks 28 and pumps 29 at ground level. Moreover, Warner et al. explicitly requires a cascade-type overflow tank configuration in order to control concentration of the liquor in the scrubbing zones. Furthermore, Nolan fails to teach or suggest anything with regard to relative placement of tanks, pumps, and/or feed pipes.

With regard to the allegations made by the Office Action (based upon the rationale set forth in the Final Office

Action) about alleged obviousness of placing circulation pumps at the same levels of the liquid collecting trays because of "rearrangement of parts," Applicants respectfully assert that none of the applied prior art or reasoning set forth in the Office Actions teach or suggest such a configuration. Specifically, neither Warner et al., Nolan, nor the comments presented in the previous Office Actions set forth any proper motivation in order to arrive at the configuration recited by at least amended independent claim 1. Here, there are no suggestions to provide: (1) a pump tank at each of the plurality of scrubber stages above the lowest one of the plurality of scrubber stages and arranged at an outer surface of the scrubber tower; (2) a pump tank connected directly to the corresponding ring-shaped fluid storage tank through a connection in the outer surface of the scrubber tower; (3) a circulation pump connected to the corresponding pump tank at a level of each of the plurality of scrubber stages; and/or (4) a circulation pump arranged to feed, through a feed pipe present in the corresponding pump tank, fluid from the corresponding ring-shaped fluid storage tank at the bottom of the scrubber stage to spray beams arranged at the upper part of the scrubber stage for distribution over the cross-section of the scrubber in a direction against the up-wards gas flow. Moreover, there are no suggestions to provide feed pipe having a length that is limited to a height of the scrubber stage.

Although the Office Actions attempts to repeatedly dismiss the unique features of Applicants' invention by asserting *In re Kuhle*, Applicants respectfully assert that the mere fact that a worker in the art could rearrange the parts of a reference device to meet the terms of a claim is not by itself sufficient to support a finding of obviousness. Here, the prior art must provide a motivation or reason for the worker in the art to make the necessary changes in the reference device. See *Ex parte Chicago Rawhide Mfg. Co.*, 223 USPQ 351, 353 (Bd. Pat. App. & Inter. 1984). Although one of skill in the art may be capable of moving pumps and tanks to an elevation, Applicants respectfully assert that nothing of record provides any proper motivation as to how or why this skilled artisan would modify any of Warner et al. and/or Nolan to arrive at the configuration required by amended independent claim 1.

Moreover, Applicants respectfully assert that modification of Warner et al. to reposition the tanks and pumps at the levels of the contacting zones 20-22 would change the principle operation of Warner et al.. As required by Warner et al., to control concentration of the liquor in the scrubbing zones, fresh liquor is introduced to the pump feeding the spray of the top zone 22 via a line 30. By such a configuration, a proportion of the liquor circulating through the top zone to be displaced into the scrubbing liquor circuit for the middle zone which in turn displaces liquor from the middle zone circuit into the bottom

zone circuit. Modifying Warner et al. to reposition the tanks and pumps at levels of the contacting zones 20-22 would prevent the concentration control required by Warner et al. Moreover, modifying Warner et al. to include the new features of amended independent claim 1 is clearly not supported by the applied prior art or the reasoning set forth in the Office Actions. As such, the Office Actions fail to establish a *prima facie* case of obviousness with regard to amended independent claim 1.

Finally, Applicants respectfully assert that placement of the feed pipe feeding the fluid to the spray beams inside the outer surface of the scrubber tower is similarly not taught or suggested by Warner et al. or by properly reasoned to be obvious in the Office Actions. Although one of skill in the art may be capable of reconfiguring feed pipes, Applicants respectfully assert that nothing of record provides any proper motivation as to how or why this skilled artisan would modify any of Warner et al. and/or Nolan to arrive at the configuration required by amended independent claim 1.

Moreover, Applicants respectfully assert that modification of Warner et al. to reposition feed pipes at an interior of the scrubbing column 19 would similarly change the principle operation of Warner et al. As required by Warner et al., tanks, pumps, and feed pipes are purposely provided at an exterior of the scrubbing column 19. Nowhere in Warner et al., or in any of the other applied prior art, is there any teaching or suggestion

of incorporating feed pipes at an interior of a scrubbing column. Modifying Warner et al. to include the new features of amended independent claim 1 is clearly not supported by the applied prior art or the reasoning set forth in the Office Actions. As such, the Office Actions further fail to establish a *prima facie* case of obviousness with regard to amended independent claim 1.

For at least the reasons set forth above, Applicants respectfully assert that Warner et al. and Nolan, whether taken singly or combined, fail to teach or suggest the combination of features recited by at least amended independent claim 1. Thus, Applicants respectfully request that the rejections under 35 U.S.C. §103(a) be withdrawn.

New Claim

Applicants respectfully assert that new independent claim 16 is also allowable over the applied prior art for at least the reasons set forth above regarding relative positioning along a scrubber tower of a pump tank and a circulation pump. Thus, Applicants respectfully request that new independent claim 16 be allowed along with the allowance of claims 1, 2, and 10.

This Response is believed to be fully responsive and to place the application in condition for allowance. Entry of the Amendment, and an early and favorable action on the merits is earnestly requested. Applicants respectfully request that a timely Notice of Allowance be issued in this application.

Should the Examiner believe that any matters need to be resolved in the present application, the Examiner is respectfully requested to contact Applicants' undersigned representative at the telephone number listed below.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

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